



25 APRIL 1995

EXCESS ENERGY CELL FINAL REPORT

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OUTLINE

REVIEW

- RETURN TO ROOM THERMAL ENVIRONMENT • CHANGES SINCE LAST REPORT
- RE-WOUND CELL
- RESIDUAL GAS ANALYSIS

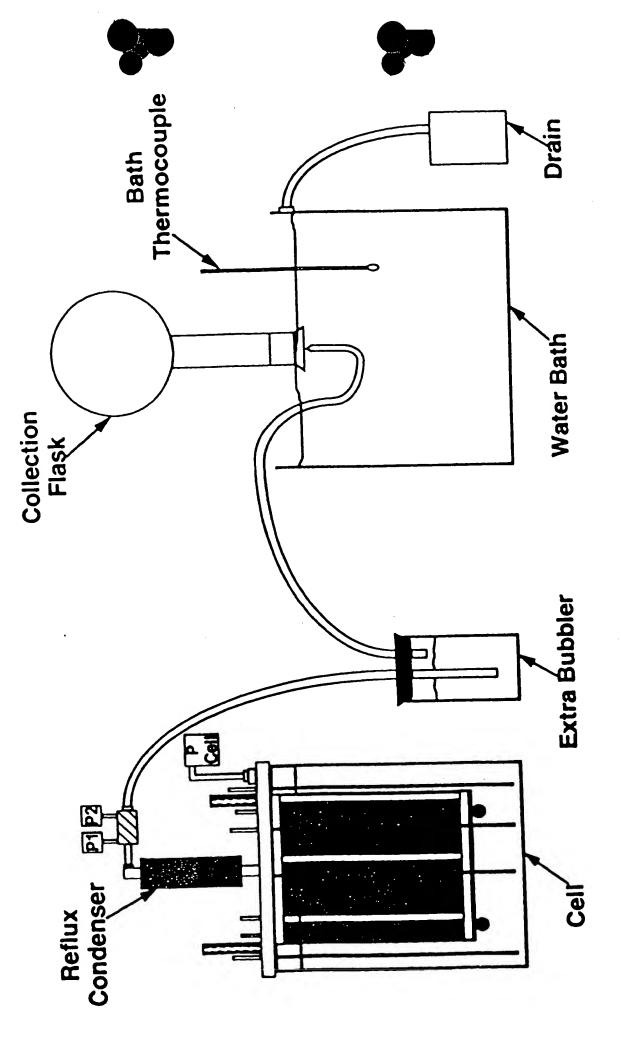
• ENERGY MEASUREMENTS

• GAS MEASUREMENTS

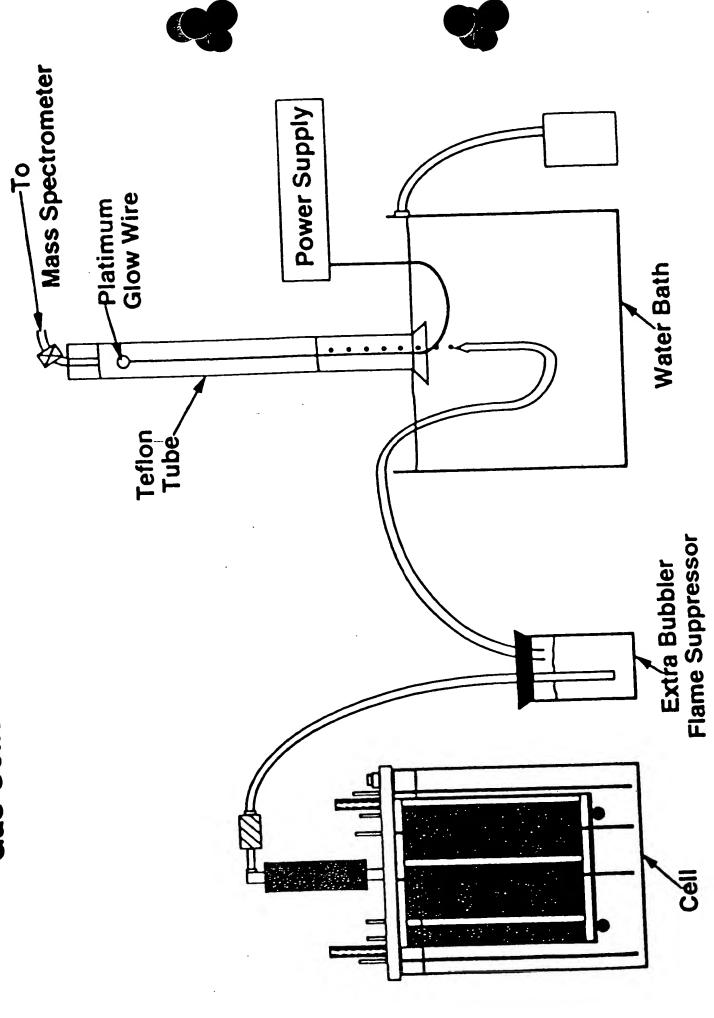
• CONCLUSIONS



Sealed Cell Layout



Gas Collection With Combustion Tube



SUMMARY OF CELLS ASSEMBLED

| | | | | | | 5 |
|------------|---|--|---|---|--|---|
| RESULTS | NO EXCESS ENERGY | NO EXCESS ENERGY | 5—10% EXCESS ENERGY | 5—►30% EXCESS ENERGY | 20—► 50% EXCESS ENERGY | 20 — 1400% EXCESS ENERGY 4 x VI INPUT |
| C/A RATIO | 520: 1 | 17: 1 | 5: 1 | .; . | 61: 1 | 75: 1 |
| | FLATINIZED Ti 100 cm ² | SOFT NICKEL SHEET 3000 cm ² PLATINIZED TI 100 cm ² | SAME | PLATINIZED TI SHEET 3100 cm ² | SAME | SAME |
| .# CATHODE | ANNEALED #41 NICKEL 1.8 lbs 52000 cm ² | SAME WIRE HEAT TREATED IN H ₂ 770°C | HARD DRAWN 0.5 mm NICKEL 16,000 cm ² | NEW WINDING HARD DRAWN 0.5 cm ² NICKEL 15,000 cm ² | HARD DRAWN - SCRATCHED #44 NICKEL 190,000 cm ² (0.002 in.) 0.05 cm dia. | #46 HARD DRAWN SMOOTH NICKEL WIRE 240,000 cm ² |
| CELL# | - | 14 | И | 7 8 | က | 4 |





OCTOBER 1994 PLANS

USE SEALED SYSTEM RECOMBINER / CONDENSER TO COLLECT GAS

REWIND CELL WITH SMOOTH #46 WIRE તં

USE WET CHEMICAL GAS ANALYZER ო CONTINUE TO LOOK FOR HIGHER EXCESS ENERGY AND CHARACTER OF RESIDUAL GAS 4







RE-WOUND CELL

#46 NICKEL WIRE • CATHODE - 4.7 lbs #46 NICKl Dia. (0.00157 inch) 0.00399 cm

SURFACE AREA 240,000 cm² CURRENT DENSITY 41 μ a/cm² @ 10a

Pt PLATED Ti ANODE - 5 FOLDED SHEETS 15.2 x 20.3 cm

SURFACE AREA 3200 cm²
CURRENT DENSITY 32 ma/cm² @ 10a
75:1 CATHODE: ANODE RATIO

• ELECTROLYTE - 16 I 0.6 M K₂ CO₃ IN LAB DI WATER



GAS FLOW ABSOLUTE MEASUREMENT



• WATER BATH TEMPERATURE ± 0.1°C

• TIME MEASUREMENT ± 0.02 sec

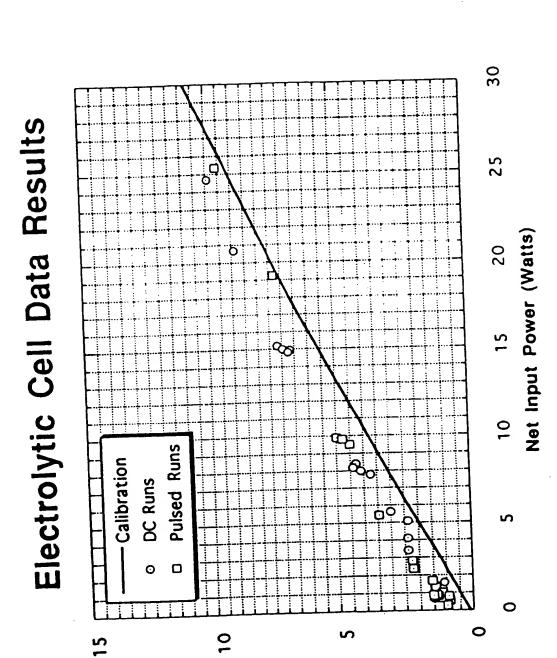
NATIONAL WEATHER SERVICE BAROMETER - CORRECTED FOR TEMPERATURE AND LATITUDE ± 0.1 mm • BAROMETRIC PRESSURE

MEASURED VOLUME CORRECTED FOR

- TEMPERATURE
 - **PRESSURE**
- WATER VAPOR CONTENT







(Cell - Ambient Temperature (C)

15

| Value Part | , | i | | | | | | Ien | Lemparalutes | | | | | | | | | |
|--|----------------------|-------|-------------|--------|--------------|-------------|-----------------|--------|--------------|----------|---------|-----------|---------------------|---------|------------|----------------|------------|--|
| Value Valu | | มี | | _ | | | | | geld. | _ | | Det inaul | | A Power | Quient/P. | Outsaule (F=1) | (limes) | |
| The color of the | • Name | | | | | 1 (2 E | | | <u></u> | <u>ق</u> | (walls) | (wette) | | | | | | |
| 2.50 | 5 K 0.) | | | | | | | | | | | 13.6 | 10,379 | 2.603 | 133.5% | 155.1% | | |
| 250 5014 1500 100% 0 23700 10154 1711 10154 | | | | | 300 | c | ~ | | 20.408 | 3.753 | 0.0786 | 7 99 2 | 11,385 | 3.393 | 142.5% | 4,7 | | |
| 2.51 | n285 | 2.830 | 4.005 | 14.136 | | | ~ | | 10.656 | 4 113 | 0.1123 | 7 994 | cal check | ۷ ۲ | • | 2 | | |
| 2,156 2,171 1,156 1,100 1,156 1,100 1,156 1,100 1,156 1,100 1,156 1,100 1,156 1,100 1,156 1,100 1,156 1,100 1,156 1,100 1,156 1,100 1,156 1,100 1,156 1,100 1,10 | n206 | 2.893 | 5.014 | 14.605 | 400 | | . ~ | | 20.202 | 0.711 | 19/1.0 | 7 65.0 | cal check | 4/2 | 4 : | (* X | | |
| 2.54 0.581 11.10 11.00 0.00 0.00 0.00 0.00 0.00 | n287 | 2.758 | 5.128 | 14,138 | 400 | , c | | | 20.648 | 10.605 | 0.3000 | 65. | Cal chack | W/W | 4/2 | i de | | |
| 2.75 (2.00) (2.0 | 0.288 | 2.740 | 5.217 | 14.295 | K 000 | • | | | 20.73 | 1.5 | 6262.0 | | 11.866 | 3.607 | 145.3% | 10.00 | 0.74 | |
| 2.519 | 280 | 2.745 | 6,761 | 16.766 | 100 | > < | • | | 19.597 | 4.285 | 0.1331 | 20.00 | 25.06 | 4,386 | 121.27 | 134.1 | ; ; | |
| 3.359 10000 33.750 100% 0.00% | | 2.920 | 4.000 | 14.507 | 100 | - | . • | 34 AA2 | 19.75 | 6.912 | 0.1709 | 20.674 | | 4/4 | ۷ ۲ | W/W | 92.0 | |
| 1.150 | 2010 | 3.367 | 10.010 | 33.704 | 100 | - | - | 10.62 | 20.637 | 0.683 | 0.2416 | 20.384 | | 3.362 | 113.6% | 122.6% | | |
| 2.515 4.515 1.520 (2.12) 1.000 (2.12) 1.000 (2.12) 1.010 | 202 | 9.350 | 10.00 | 33.620 | 1001 | . | • | 10.455 | 20.52 | 9.935 | 0.3851 | 24.60 | 12.2 | 4.032 | 140.4% | 170.64 | 5 | |
| 2.519 4.518 1.518 100% 2 2.5120 10.519 2.584 0.1100 2.520 Wheeless of M.A. M.A. M.A. M.A. M.A. M.A. M.A. M.A | 203 | 3.488 | 11.500 | 40.112 | 1001 | > | | 24.184 | 19.78 | 4.404 | 0.0417 | 90.10 | 12 208 W heaters ac | 4 X | 4/2 | | | |
| 2.556 6.756 13.577 100% 2.575 10.556 0.756 | 700 | 2.910 | 4.008 | 14.580 | 1001 | > < | | 28.013 | 19.662 | 6.161 | 0.1007 | 900. | 1 718 W heelers ad | 4/2 | ∀ ? | i d | 00.0 | |
| 2,585 | 304 | 2,758 | 4.645 | 12.535 | 1004 | > < | - | 24.726 | 20.36 | 4.366 | 0.2800 | 905.7 | 6.68 | 3.170 | 193.6% | 8 | | |
| 2.853 2.879 6.257 6.00% 0 22.029 19.864 2.875 0.1772 0.259 0.279 | 206 | 2.889 | 4.768 | 13.679 | 1001 | • | | 21.0 | 19.516 | 2.384 | 0.1156 | 7.6 | de evelen W crc c. | 4 / ¥ | ۷ ۲ | i i | | |
| 2.556 2.577 6.625 100% | 7020 | 2.630 | 2.786 | 7.275 | 1001 | > < | | 22.620 | 19,964 | 2.876 | 0.1212 | 9.60 | A 600 W healers ad | V I | 4) | ì | | |
| 2.543 2.576 6.627 100% 0 22.447 10.443 2.682 0.110 4.024 1.32.4% 1.12. | 206 | 2.660 | 2.570 | 6.625 | 2 9 9 | | | 23.906 | 10.671 | 4.336 | 0.000 | 1351 | 1,078 W heelers 80 | ۷ Ž | ď Ž | 1 | | |
| Charles days Charles | 00200 | 2.533 | 2.676 | 6.525 | 200 | | | 22.467 | 19.625 | 2.862 | 0.11.6 | | | | ** | 27.75 | 0 70 | |
| 1.2.25 1.2.05 2.6.45 1.004, 0 2.8.105 1.8.104 4.1.2 4.1.2 4.1.2 4.1.5 | 0000 | | 2.676 | 209.9 | 2 | • | | | | , | | 16.106 | 20,119 | 4.024 | 4 7 7 7 1 | 142.0% | 0.77 | |
| 5.228 7.000 CALLER 1004 CALLE | Jason - Date L | | a veludanos | | | 0 | | 26,603 | 10.804 | 7.18 | | 14.994 | 10.47 | 4.476 | 70.07 | 4) Z | 1 06 | |
| 1,022 2.00 2.00 2.00 2.00 2.1 2.2 1.05 1.05 0.003 2.75 0.153 0.153 0.1 | un302 | 3.226 | | 25.44 | | 0 | | 26.617 | 10.545 | 9.0.0 | | | 3.926 | 3.236 | ¥1.05 | W/W | 2.00 | |
| 1,823 2,526 2,000 20% 6 3,2 2,136 1,137 2,21 0,0303 2,736 6,116 3,702 2,926% NAA 1,929 2,926 | Un303 | 3.220 | | 2.000 | | • | 2.0 | 21.069 | 90.00 | 1 503 | | | 4.155 | | 221.3% | 4/2 | 1.29 | |
| 1,000 1,00 | undot tow P | | | 2.000 | | • | 8. 8. | 21.165 | 7 0 0 0 | 2.241 | | | 6.185 | 3.563 | 124.5% | 136.4% | 0.72 | |
| 2.046 2.064 1.00% 0 2.6 2.100 10.773 2.216 0.0004 2.334 4.029 2.726 2.106 2.016 4.029 2.0004 1.229 2.0004 1.229 2.0004 1.229 2.0004 1.229 2.0004 1.229 2.0004 1.229 2.0004 1.229 2.0004 1.229 2.0004 1.229 2.0004 1.229 2.0004 1.229 2.0004 1.229 2.0004 1.229 2.0004 1.229 2.0004 | UNSOFTEN P | 040.6 | | 4.809 | | • | | 22.136 | 20.336 | 9.66 | | | 109.91 | 3.762 | 250.8% | 4/1 | | |
| 1,000 1,20 | 1000un | | | 26.601 | | 0 | , | 27.004 | 10.33 | 2.216 | | _ | 9 | 2 736 | 311.5% | W/W | | |
| 1967 2.626 2.207 10% 6 2.6 2.1286 19.84 1.439 0.0064 1.329 0.664 3.33 3.44 M/A | tundole | 2.046 | | 4.037 | | • | N (| 2.72 | 20.004 | 1.457 | | | 920. | 2 4 6.1 | 200.6% | W/W | 1.62 | |
| 1,033 2,226 2,462 20% 6 | lun307 | . 88. | | 2.207 | | | 5. G | 20.12 | 10 840 | 1,436 | | | 9.69 | | 467.0% | 4/1 | 2 43 | |
| 1,002 1,006 1,373 10% 6 2.6 2,105 2,135 0,005 | a constant | | | 2.462 | | • | 7. 0 | 007.12 | 20 504 | 1,202 | | | 3.33 | • | 4 | 4/1 | ۷ ۲ | |
| 1,784 1,853 1,428 10% 6 2,850 2,068 0,685 0,0020 0,550 2,218 413,1% 625,3% 1,571 1,680 0,088 1,097 1,057 1,0 | Jungos | | | | | _ | 2.6 | 20.72 | 20.182 | 2.213 | | | | | 452.0% | 4 / N | 2.10 | |
| 1,787 1,528 1,137 10% 6 21,500 1,050 0,0014 0,107 2,025 1,107 1488.6% 3392.6% 1,1050 0,999 1,946 100% 0 19,937 1,050 0,1014 0,104 | 200310 | 700. | | | | | 6 | CAC.22 | | 0.80 | | | 2.491 | | 413.1% | 625.3% | _ 3 | |
| 1,604 0,809 1,946 100% | Run311 | | | | | | % % | 21.503 | 10.60 | 1.05 | | | 2.023 | 1.4.10 | 1406.6% | 3382.6% | 4.26 | |
| 1.662 0.276 0.470 100% 0 17.53 0.0015 0.166 1.980 0.166 1.980 0.166 1.470 103.1% 270.2% 1.682 0.278 0.467 100% 0 21.353 20.247 1.060 0.202 3.066 2.407 100.0% 1.470 103.1% 270.2% 1.680 0.202 2.002 4.000 2.407 100.0% 1.470 100.0% 1.060 2.407 100.0% 1.060 2.208 2.407 100.0% 1.060 2.208 2.407 100.0% 1.060 2.208 2.407 100.0% 1.060 2.208 2.208 2.400 2.40 | Rund12 | 20. | | | | | | 0.0 | 10.217 | 0.71 | | | 2.00.2 | | 4 / 1 | 4/# | ۲ ۲ | |
| 1,682 0.276 0.467 100% 0 | Aun313 | ď | | | | | | | 900 | 1,75 | | | | | 4/1 | 4/1 | ∀ } | |
| 1.660 0.276 0.466 100% 0 21.353 20.247 1.106 0.0142 1.589 3.009 2.407 160.0% 177.6% 110.6% 2.160 2.002 4.304 100% 0 21.353 20.247 1.106 0.0142 1.589 3.007 6.599 2.407 160.0% 110.6% 10.0% 2.620 8.364 1.001 | HUNDIA | - 99 | | | | | | 70. | 10 300 | 2.48 | | | | | 103.1% | 230.2% | | |
| 2.150 2.002 4.304 100% 0 2.206 18.669 2.391 0.0256 4.102 0.0251 1.014 101.0% 105.4% 105.4% 2.565 3.690 0.0401 10.04 0.3847 5.307 64.021 1.040 128.5% 105.4% 105.4% 2.369 0.0162 5.090 6.399 1.47.0% 101.7% 101.7% 100% 0 23.615 20.401 3.014 0.0506 0.056 2.29 1.440 1.28.5% 101.7% 100% 0 23.615 20.401 3.014 0.0506 0.056 3.264 2.209 147.0% M/A 2.643 1.007 100% 0 2.62 21.321 19.856 0.0046 0.056 3.266 2.209 319.7% M/A 1.824 2.120 1.700 10% 0 2.120 1.001 10% 0 2.120 1.001 1 | | 1 00 | | | | | | 36.19 | 20.247 | 1.10 | | | 990.5 | 2.407 | 160.0% | 177.6% | | |
| 2.626 3.680 0.040 100% 0 36.070 20.490 10.46 0.3047 55.00 6.530 1.440 120.5% 105.4% 2.564 3.167 0.005 70.140 100% 0 20.490 10.574 2.369 0.0162 5.000 6.530 1.440 120.5% 147.0% N/A 2.543 3.167 0.005 70.140 100% 0 23.016 20.601 3.014 0.0300 5.631 4.109 3.264 400.6% N/A 2.776 3.004 11.007 100% 0 2.6 21.321 10.836 1.406 0.0046 0.066 4.109 3.264 400.6% N/A 1.824 2.106 1.763 10% 4 2.6 21.321 10.835 1.016 3.266 2.001 2.004 0.0040 0.004 1.007 100% 0 2.001 10% 0 2.0 21.200 1.307 0.0040 0.0074 4.208 2.001 10% 0 3.0 21.200 10.746 1.307 0.0040 1.077 4.208 2.001 10% 0 3.0 21.200 10.746 1.307 0.0040 1.308 0.304 0.0041 0.700 1.308 0.304 0.0041 0.700 1.308 0.304 0.0041 0.700 1.308 0.304 0.0041 0.700 1.308 0.304 0.0041 0.700 1.308 0.304 0.0041 0.700 1.308 0.304 0.0041 0.700 1.308 0.304 0.0041 0.700 1.308 0.304 0.0041 0.700 1.308 0.304 0.0041 0.700 1.308 0.304 0.0041 0.700 0.0041 0. | HUNDIS OF | 2.15 | | | | | | 20.00 | 10 660 | | | | | 4101 | 101.0% | 110.0% | | |
| 3.067 20.000 70.140 100% 0 21.943 19.574 2.369 0.0162 5.080 0.324 2.869 147.0% 141.0% 141.0% 161.7% 2.864 2.164 100% 0 21.943 19.574 2.369 0.0165 1.018 3.264 460.6% M/A 2.778 3.999 11.097 100% 0 2.0.673 19.486 0.0046 0.0066 2.298 2.298 310.7% M/A 1.834 2.186 1.763 10% 12 2.6 20.673 19.486 1.176 0.0046 0.794 3.266 2.001 1.001 1.0 | 1000 | 2.62 | | | | | | 0.00 | 20.499 | | | _ | | 1 440 | | 105.4% | _ | |
| 2.643 3.167 6.064 100% 0 23.616 20.601 3.014 0.0300 5.631 4.109 3.264 460.6% N/A 2.776 3.999 11.097 100% 0 28.615 1.486 0.0046 0.666 4.109 3.264 472.0% N/A 1.612 2.084 1.697 100% 0 2.6131 10.636 1.776 0.0035 1.016 3.246 2.655 472.0% N/A 1.634 2.186 1.763 10% 4 2.6 21.04 1.387 0.0046 0.704 3.686 2.691 2.691 2.691 442.1% N/A 1.624 2.129 1.700 10% 6 2.0 21.143 10.746 1.387 0.0046 1.677 4.288 2.891 2.891 2.848 N/A 1.836 3.057 2.676 10% 6 4.0 23.383 19.031 3.462 0.0145 5.430 2.618 1.3849 Alphad 4.0 23.383 19.031 19.81 4.891 0.0163 0.888 13.849 1.629 331.8% N/A 1.2.7% 1.800 10% 6 4.8 24.801 19.81 4.891 0.0163 1.7236 18.319 11.081 10.08.3% 112.7% 1.2.7% | 015001 | 90 6 | | | | | | 20.00 | 10.574 | | | | 0.35 | 2.693 | | £.5 | | |
| 2.776 3.999 11.087 100% 2.6 21.321 19.836 1.466 0.0046 0.005 3.266 2.236 310.7% N/A 1.612 2.084 1.087 100% 2.6 20.673 1.016 3.266 2.265 472.0% N/A 1.634 2.186 1.765 0.0055 1.016 3.266 2.065 472.0% N/A 1.634 2.186 1.763 10.744 1.397 0.0046 0.704 3.686 2.001 2.001 1.007 4.208 2.001 1.007 4.208 2.001 1.007 4.208 2.001 1.007 4.208 2.001 1.007 4.208 2.001 1.007 4.208 1.007 0.0046 1.077 4.208 2.001 1.007 1.001 | arcust of the second | 2.64 | | | | | | 23.815 | | | | | 90. 7 | 3.264 | | 4/2 | 7.5 | |
| 1.834 2.186 1.763 10% 12 2.084 1.175 0.0035 1.016 2.085 472.0% M/A 1.834 2.186 1.763 10% 12 2.0 21.08 1.386 0.0046 0.794 3.886 2.081 2.881 2.42.1% M/A 1.809 2.019 1.601 10% 8 2.0 21.143 10.746 1.387 0.0046 1.677 4.288 2.881 2.881 2.84. M/A 1.824 2.129 1.700 10% 8 3.0 21.296 19.752 1.844 0.0046 1.677 4.288 2.881 2.881 175.7% M/A 1.824 2.129 1.700 10% 8 4.0 23.383 19.031 3.482 0.0115 5.430 2.819 1.829 331.8% M/A The fun following adoptional states 10% 8 4.0 24.801 19.81 4.891 0.0163 0.0842 0.0041 17.236 18.319 1.081 108.3% 112.7% | Hunder | 2.77 | | _ | - | | • | 21 321 | | _ | | | | 2.238 | • | d i | | |
| 1,834 2.186 1.763 10% 4 2.6 21.06 10.066 1.367 0.0040 0.074 3.686 2.001 254.8% M/A 1,800 2.010 1.001 10% 4 2.6 21.143 10.746 1.307 0.0040 1.677 4.268 2.691 254.8% M/A 1,824 2.120 1.700 10% 8 3.0 21.296 19.762 1.644 0.0066 1.677 4.268 2.691 2.591 2.54.8% M/A 1,936 3.067 2.076 10% 8 4.0 23.363 19.031 3.462 0.0115 5.430 9.541 4.111 17.7% M/A 2,169 6.218 7.001 10% 8 4.0 24.601 19.81 4.091 0.0163 0.086 13.849 1.081 106.3% 112.7% 2,326 8.889 13.419 10% 8 4.0 24.601 19.81 4.091 0.0041 17.236 18.319 1.081 106.3% 112.7% | 11622 | 1. | | | | • • | , c | 20.673 | | _ | | | | 2.965 | | 4 ? | 2.3 | |
| 1.608 2.018 1.601 1.70 10% 6 2.6 21.143 19.746 1.397 0.0066 1.677 4.268 2.681 2242 M/A 1.1824 2.120 1.700 10% 6 3.0 21.296 19.762 1.644 0.0066 1.677 4.268 2.111 1.75.7% M/A 1.936 3.057 2.076 10% 6 4.0 23.363 19.031 3.462 0.0115 5.430 9.541 4.111 17.27% M/A 1.27% M/A 1.2.7% 1.600 1.061 1. | 13un323 | 1.03 | | | | | 2.0 | 21.06 | | | | | | 2.001 | | | • | |
| 1,824 2.129 1.70 1,936 3.057 2.876 10% 8 4.0 23.383 19.031 3.462 0.0115 5.430 9.541 4.111 1.2.7% 2,169 6.216 7.901 10% 8 4.0 24.801 0.0163 9.886 13.849 1.829 331.8% N/A - The run ro. accdentally adopted 13.418 10% 8 4.8 24.801 19.81 4.991 0.0041 0.790 2.819 1.829 331.8% 112.7% | Hun324 | 1.0 | | | | • | 2.0 | 21.143 | | | | | | 2.601 | | 4 | 1.21 | |
| 2.160 6.216 10% 6 4.0 23.363 19.831 3.502 8.866 13.840 3.863 140.1% N/A This numre, excidentally allipsed 3.818 10% 6 4.6 24.801 19.81 4.891 0.0163 9.866 13.840 3.840 331.8% N/A This numre, excidentally allipsed 33.18% 8 4.6 24.801 19.81 0.942 0.0041 0.790 2.819 1.081 108.3% 112.7% | Aun328 | ÷ . | | | | • | 9.0 | 21.296 | | | | | • | 7. | | | • | |
| 2.150 0.040 1.000 10% 0 4.0 24.001 19.01 4.991 0.0163 0.066 13.040 3.053 331.0% N/A 112.7% 1.000 1.000 1.001 1.001 1.003% 112.7% 112.7% | Rund28e | | | | | • | 0.4 | 23.383 | | | 1 | • | | | • | | 1,03 | |
| The run no. excomming with the second of the second | Run327 | | - 1 | 7 | | | | | | | | | _ | 9.60 | | | : | |
| 2.54 1.600 10% 6 2.6 2.7.7. 2.500 0.0301 17.236 18.319 1.000 | Rungza - The | Ę | • | | | • | • | 24.601 | . • | | | | | | | | _ | |
| | Aun 329 | 3 | | | | - | ~ | 21.6 | | | | | | | | | | |

| The color of the | | | • | Pr. Calbandare | | TO PERSON | | | | | | | |
|--|------------|----------------|--------------|--------------------|------------|-----------|---------|--------|---------|------------|---------------|------------|-----------------|
| | | | | | | | | | | | _ | Peredey | Date Taken Over |
| (TCT) (LANGE CONTINUED CON | | | | | č | 5 | 2 | 2 | ediles | ជ | (cc/min) | Killelency | Time Bance |
| Thirties | | (Torr) | (Torr) | (0 _p d) | 1 <u>6</u> | 1 (8) | (oj e (| (pele) | (beled) | <u>(</u>) | (fully cort.) | | familia |
| | Ì | (man Berocell) | (celibrated) | | | | | | | | 47.20 | 64.29% | 1250-1350 |
| 1,14,150 1,15,150 | | 267.30 | 750.86 | 0.6032 | 0.8013 | 15.27 | 0.4896 | 15.15 | 0.117 | 20.34 | 46.13 | 85.60% | 3200.3600 |
| 1,15, 1,15 | 2 1 | 766.62 | 759.30 | 0.7183 | 0.7202 | 15.37 | 0.6555 | 15.3 | 0.0647 | 20.031 | 44.01 | 77.98% | 2000-2200 |
| 785.65 785.25 78 | | 745.81 | 730.31 | 0.7753 | 0.7777 | 15.05 | 0.781 | 14.80 | 0.000 | 20.522 | 47.58 | 81.36% | 1650-1700 |
| 178.48 754.42 774.04 777.04 772.0 777.04 77 | 3 | 766.65 | 750.33 | 0.9375 | 0.0405 | 13.60 | 0.07.14 | 15.32 | 0.0648 | 20.443 | 53.68 | 83.27% | 1050-1100 |
| 711.06 | 2 | 767.68 | 760.32 | 0.7086 | 0.7093 | 20.70 | 0.0443 | 15.22 | 0.0586 | 19.740 | 47.31 | 84.42% | 3600-3700 |
| 711, 05 772, 75 784, 40 0.0454 0.0471 1.52 0.100 1.52 0.100 1.0 0.042 0. | 8 | 758.43 | 751.43 | 0.7775 | 0.7804 | 13.4 | 0.76.0 | 15.20 | 0.000 | 19.725 | 95.90 | 85.46% | 7200 7500 |
| 78, 78 78, 78, 78, 78, 78, 78, 78, 78, 7 | Š | 771.06 | 763.58 | 0.5420 | 0.5451 | 15.20 | 7.01.0 | 15.12 | 0.1267 | 20.856 | 96.63 | 86.30% | 1300-1400 |
| 774,400 777,75 778,14 0,4775 0,4795 1,520 0,520 1,520 0,0275 1,510 0,0275 1,510 0,0275 1,510 0,0777 1,520 0,0 | 282 | 765.75 | 756.46 | 0.6040 | 0.6072 | 13.63 | | 15.37 | 0.1379 | 20.577 | 111.08 | 86.86% | 1250-1350 |
| 774.00 777.25 0.4775 0 | 2 | 773.78 | 766.18 | 0.7184 | 0.7209 | 20.01 | 0.3630 | 44.4 | 0.0636 | 10.062 | 47.05 | 85.58% | 2000-2100 |
| 171,00 171,23 0.4714 0.4727 0.4827 0.1529 0.5241 1.152 0.5241 0.5241 1.152 0.5241 1.152 0.5241 1.152 0.5241 1.152 0.5241 1.152 0.5241 1.152 0.5241 0 | i a | 774.00 | 767.28 | 0.4375 | 0.4395 | 10.23 | 200 | 9 | 0.0786 | 10.666 | 42.28 | 82.03% | 2500-3000 |
| 756,776 756,46 711,100 1,1100 | ž | 774.90 | 787.25 | 0.6714 | 0.6737 | 0.40 | | 14.51 | 0.0777 | 20.500 | 45,81 | 85.71% | 950-1030 |
| Try | 3 | 756.79 | 749.85 | 1.1130 | 1.1160 | 30.00 | 2020. | 15.85 | 0.0769 | 19.680 | 26.35 | 91.43% | 2000-2000 |
| Trigge T | 200 | 779.70 | 771.87 | 1,0230 | 1.0260 | 30.65 | | 15.57 | 0.0777 | 20.291 | 24.55 | 64.02% | 6161-0621 |
| Trought Trou | 7 | 762.46 | 766.29 | 1.0690 | 1.0720 | 0.0 | | 9 | 0.0811 | 19.645 | 23.58 | 61.66% | 1800-2200 |
| The color of the | , 8 | 769.11 | 761.69 | 0.9629 | 0.9659 | 19.67 | 6,66. | 45.75 | 0 0 0 0 | 10.070 | 23.64 | 81.90% | 3500-4000 |
| Page | | 770.62 | 783.14 | 1.0040 | 1.0970 | 15.63 | 1.0203 | 2 | | | | | |
| 775.04 777.02 2.5300 12.24 1.252 12.25 0.0224 10.00 77.38 9.7344, 17.50 17.50 17.30 9.7344, 17.50 17.5 | | | Hure | | | • | 3000 | 16.85 | 0.0875 | 10.633 | 78.57 | 86.40% | 1800-2200 |
| 775.04 772.02 2.2700 7.2270 2.2470 2 | 200 | | | 1.3066 | 1.3110 | 20.0 | 6633. | 30.01 | 0 0424 | 19.960 | 77.38 | 87.34% | 1150-1250 |
| Operation 772.02 -6.2070 < | | 175.04 | 767.39 | -2.5190 | -2.5200 | 12.29 | .700.7. | | 0.1313 | 10.060 | 0.77 | 37.75% | 5000-5150 |
| 14.00 14.0 | SO POR P | 779.86 | 772.02 | -8.2970 | -8.28/0 | | 6.746 | 21.34 | 0.1464 | 20.095 | 0.40 | 37.48% | 2400-2800 |
| 778.38 771.53 -5.730 -5.730 15.64 0.0371 20.661 77.50 773.04 76.53 0.0307 0.4156 15.19 0.4371 20.661 20.70 15.19 0.4371 15.19 0.0020 20.270 6.79 23.96% < | SOL-HON P | 756.50 | 749.66 | 0000.9 | 0.50.7 | | S 8580 | 0.03 | 0.1209 | 20.183 | 14.87 | 35.74% | 1900-2000 |
| 773.07 785.50 0.00053 0.0017 15.10 0.0475 15.10 0.0001 20.110 12.52 24.75% 12.54 735.41 746.01 746.01 0.4164 0.4165 14.87 0.4156 0.4156 14.87 0.4156 14.87 0.4156 14.87 0.4156 14.87 0.4156 14.87 0.4156 14.87 0.4156 14.87 0.4156 14.87 0.4156 14.87 0.4156 14.87 0.4156 14.87 0.4156 14.87 0.4156 14.87 0.4156 14.87 0.4156 15.22 0.4156 | 908 | 779.36 | 771.53 | 9.7380 | 0001.6 | | 0 4 700 | 15.64 | 0.0371 | 20.661 | 79.90 | 98.48% | 6261-7/71 |
| 773.04 785.47 0.3887 0.4456 1.516 0.4051 15.16 0.0020 20.270 6.79 23.08% 27.08% 27.58% 27.59% | 900 | 773.07 | 765.50 | 0.0063 | 1,00.0 | 99.61 | 0.076 | 15.10 | 0,0031 | 20.110 | 12.52 | 34.75% | |
| 755.01 740.01 0.4064 0.4164 0.4071 15.18 0.0020 20.184 8.47 33344. 771.08 784.46 0.4401 0.4091 15.18 0.4071 15.18 0.0020 20.184 8.47 33344. 785.38 786.38 0.4442 0.4091 15.18 0.4134 14.00 0.0012 20.422 4.60 22.15% 757.22 757.22 757.22 757.23 0.4142 15.20 0.4143 14.20 0.0012 20.422 4.60 22.15% 757.24 757.24 0.4163 15.23 0.0002 20.004 20.422 3.00 20.25% 9.12 9.12 9.12 9.12 9.12 9.12 9.12 9.12 | 2007 | 773.04 | 785.47 | 0.3967 | 0.4207 | | 41.4 | 14.87 | 0.0020 | 20.270 | 6.70 | 23.08% | |
| 775.06 784.45 0.4061 0.4144 1.0.1144 14.09 0.0014 21.043 6.16 22.15% 0.416 758.38 0.4140 0.4144 14.09 0.4134 14.09 0.0012 20.0422 4.60 22.15% 0.4140 0.4144 14.09 0.4134 14.09 0.0012 20.0422 4.60 22.15% 0.4163 15.23 0.4155 0.41 | 908 | 755.01 | 749.01 | 0.4164 | 0.4155 | 9.4 | 2 6 6 6 | 15.16 | 0.0020 | 20.184 | 0.47 | 33.04% | 3260-3660 |
| 786.86 758.36 0.4140 0.4144 0.4143 0.4143 0.4143 0.4143 0.4143 0.4143 0.4143 0.4143 0.4155 15.23 0.0008 20.644 3.08 22.15% 757.22 7767.20 747.27 0.4156 0.4156 0.4153 15.23 0.0108 18.036 0.0644 0.0008 18.036 0.0008 18.036 0.0109 18.036 0.0008 18.036 18.036 0.0008 18.036 18.036 18.036 18.036 18.036 18.036 | 905 | 771.98 | 764.46 | 0.4001 | 0.4041 | 9 4 | 0.110 | 15.06 | 4100.0 | 21.043 | 6.16 | 26.41% | 000.000 |
| 755.22 750.27 0.4443 0.4419 0. | 919 | 765.86 | 756.38 | 0.4140 | 0.4144 | | 70.7 | 14.89 | 0.0012 | 20.422 | 7.60 | 22.15% | 650-750 |
| 775.36 767.70 0.4157 0.4163 14.02 0.0019 10.036 0.12 81.45% 756.36 751.36 0.4156 0.4163 14.02 0.0144 14.02 0.0005 10.422 2.52 80.85% 756.36 751.36 0.4224 15.09 0.4219 15.09 0.0005 10.422 2.05 80.85% 775.09 771.27 0.3946 15.26 0.3943 15.26 0.0001 10.435 19.53 2.06 80.85% 775.02 775.02 761.96 0.4156 0.4156 15.22 0.4115 15.12 0.0001 10.405 19.75 19.55 80.71% 775.02 761.96 0.4156 0.4156 15.22 0.4123 15.11 0.0045 20.453 19.76 19.55 80.71% 775.02 761.96 0.4156 0.4166 15.22 0.4123 15.11 0.0045 20.453 19.76 19.55 87.7% 750.92 755.44 0.6095 15.19 14.60 0.1636 20.295 19.76 190.00 84.30% 756.02 | | 757.22 | 750.27 | 0.4143 | 0.4146 | | 77.0 | 14.23 | 0.000 | 20.064 | 3.00 | 23.32% | |
| 758.36 751.36 0.4166 0.4224 15.09 0.0005 19.422 2.52 80.85% 759.36 77.17 759.63 0.4224 15.09 0.0003 19.535 2.06 88.535 2.06 88.535 2.06 88.535 2.06 88.74 9.71 19.7 19.7 9.71 19.7 9.71 19.7 9.71 19.7 9.71 19.7 9.71 19.7 9.71 9.71 19.7 19.7 9.71 19.7 9.71 9.71 19.7 19.7 9.71 19.7 19.7 9.71 19.7 | | 775.36 | 767.70 | 0.4157 | 0.4163 | 27.61 | 77.7 | 14.02 | 0.00.0 | 19.936 | 9.12 | 81.45% | |
| 767.17 756.63 0.4218 0.4224 15.20 0.0003 19.535 2.00 88.88% | | 756.36 | 751.36 | 0.4156 | 0.4163 | 7 00 | 0.4210 | 15.00 | 0.000\$ | 10.422 | 2.52 | 80.95% | |
| 776.06 771.27 0.3837 0.3878 15.22 0.0001 19.405 19.7 0.3378 19.5 0.3378 15.12 0.0045 20.453 19.55 19.55 87.11% 10.50.2 75.02 76.10 0.4166 15.22 0.4155 15.11 0.0045 20.453 19.75 19.55 87.11% 19.5 0.4166 15.12 0.4153 15.11 0.0045 20.453 19.75 19.50 19.55 | 416 | 767.17 | 759.63 | 0.4216 | 0.4224 | 2.5 | 0 3943 | 15.28 | 0.0003 | 19.535 | 2.08 | 86.66 | |
| 775.02 767.37 0.4106 0.4116 13.46 0.412 15.11 0.0045 20.453 19.55 87.11% 15.10 0.0045 20.453 19.55 87.11% 15.10 0.0045 20.453 19.55 87.11% 15.10 0.0045 15.11 0.0045 20.245 169.00 84.30% 15.20 0.6069 15.12 0.5061 15.16 0.0108 19.767 169.00 84.30% 15.20 0.6069 15.12 0.1024 19.770 20.295 169.00 84.30% 15.20 0.6065 15.12 0.1024 19.770 20.295 169.00 84.30% 15.20 0.6065 15.12 0.1024 19.770 20.295 19.070 20.246% 15.20 0.6065 15.12 0.1024 19.770 20.295 19.070 20.246% 15.20 0.6065 15.12 0.1024 19.770 20.295 19.070 20.246% 15.20 0.6065 15.26 0.0025 19.070 20.246% 15.20 0.6065 15.26 0.0025 19.070 20.246% 15.20 0.6065 15.26 0.0025 19.070 20.270 20.00% 15.20 0.6065 15.26 0.0025 19.070 20.297 20.00% 15.20 0.0065 15.26 0.0025 19.070 20.297 20.00% 15.20% 15 | 1 | 779.08 | 771.27 | 0.3937 | 0.3846 | 9.6 | 9114 | 15.22 | 0.000 | 19,405 | 1.97 | 63.31 % | - |
| 766.10 761.60 0.4160 10.16 10.16 10.767 34.30 65.47% 762.60 755.44 0.6095 0.6090 15.19 0.5001 15.16 0.0104 10.767 22.10 62.46% 762.60 755.44 0.6095 0.6105 15.22 0.6005 15.12 0.1024 10.770 22.10 62.46% 766.02 746.02 746.16 0.7814 0.7829 16.22 0.6005 15.12 0.1024 10.770 22.10 62.46% 756.02 756.02 756.02 756.02 14.76 0.1306 20.746 27.46 27.46 27.46 27.46 27.54 27.34 27 | | 175.02 | 767.37 | 0.4108 | 0.4116 | 77.61 | | 14.11 | 0.0045 | 20.453 | 19.55 | 87.1.8 | |
| 762.60 755.44 0.6095 0.0009 15.19 0.5091 14.60 0.1636 20.205 160.00 84.30% 762.60 763.44 0.2108 0.2115 14.76 0.0479 14.60 0.1024 10.779 22.18 62.46% 766.02 746.15 0.7814 0.7829 16.22 0.6002 15.12 0.1024 10.779 37.54 83.74% 93.74% 766.02 761.19 0.6116 15.11 0.4612 14.76 0.025 19.779 37.54 83.74% 93.74% 766.60 746.63 0.6116 15.11 0.4612 14.76 0.0025 19.791 6.20 26.60% 766.60 746.63 0.6840 0.6860 15.56 0.0023 19.701 6.02 19.870 6.02 26.60% 756.48 756.48 15.80 0.0022 19.827 6.18 25.84% 756.48 756.48 15.80 0.0023 19.876 6.18 25.84% 756.48 756.48 17.06 0.0031 20.149 18.04 25.88% 756.80 756.80 17.71 3.1212 17.71 0.0048 19.708 25.46 26.51% 774.31 768.80 18.70 0.8038 18.70 0.0023 20.897 8.08 26.51% 774.31 768.80 18.70 0.8038 18.70 0.0023 20.897 8.08 26.53% 774.31 | | 769.10 | 761.66 | 0.4150 | 0.4168 | 15.12 | 200 | | 0.0108 | 19.767 | 34.30 | 85.47% | |
| 760.92 753.62 0.2106 0.2115 14.76 0.0479 15.02 0.1024 19.779 22.18 62.46% 756.02 746.15 0.7614 0.7829 15.22 0.6605 15.12 0.1024 19.779 22.18 62.26 88% 756.10 | | 762.60 | 755.44 | 0.6095 | 0.609.0 | 20.00 | | | 91910 | 20.205 | 169.00 | 84,30% | |
| 766.02 748,16 0.7814 0.7829 15.22 0.8803 13.14 0.106 20.746 37.54 83.74% 756.02 781,19 0.8103 0.8118 15.11 0.4812 14.98 0.1306 20.748 6.20 28.88% 756.18 751.19 0.8211 14.79 0.2186 14.78 0.0023 19.078 6.20 28.88% 752.80 756.80 | | 740.92 | 753.62 | 0.2108 | 0.2115 | 14.76 | 0.04/8 | | 1000 | 10.770 | 22.18 | 62.48% | • |
| 756.16 751.19 0.6103 0.6116 15.11 0.6512 19.076 6.26 26.56% 756.66 754.52 0.2201 0.2211 14.70 0.2166 14.70 0.0025 19.076 6.26 22.33% 766.68 766.69 766.63 0.2617 0.6660 15.26 0.6936 15.26 0.0022 19.070 6.16 25.61% 752.60 767.44 1.2460 15.26 0.6936 15.26 0.0022 19.070 6.16 25.61% 756.16 757.40 0.3652 0.3644 14.86 0.3941 14.96 0.0023 19.076 6.09 25.64% 756.16 750.90 2.5690 2.5640 17.06 2.5640 17.06 0.0031 20.140 16.04 25.68% 756.20 767.49 17.06 0.0031 20.140 25.68% 756.20 767.49 17.00 0.0031 20.140 25.68% 756.20 767.49 17.00 0.0031 20.140 25.68% 756.20 766.73 3.1200 3.1260 17.71 3.1212 17.71 0.0046 19.70 6.08 26.51% 774.31 762.40 766.73 0.0036 16.70 0.0032 20.687 6.08 26.53% | | 766.02 | 746.16 | 0.7814 | | 16.22 | 0.000 | | 0 1306 | 20.746 | 37.54 | 63.74% | |
| 761.75 754.62 0.2201 0.2211 14.79 0.0037 19.19 15.47 22.33% 766.66 746.63 0.0040 0.0000 15.50 0.0037 15.50 0.0022 19.010 6.02 26.00% 766.66 746.63 0.2017 0.0000 15.20 0.0030 15.20 0.0022 19.07 6.02 26.00% 762.60 746.63 0.2017 0.0000 15.20 0.0032 19.07 6.09 25.04% 764.66 757.44 1.2460 1.2470 16.07 1.2440 15.06 0.0022 19.07 6.09 25.04% 756.16 751.19 0.3652 0.3664 14.86 0.3041 14.06 0.0023 19.07 6.09 25.04% 756.16 750.00 2.5690 2.5640 17.06 2.5640 17.06 0.0031 20.140 25.04% 767.60 767.60 750.00 3.1200 3.1200 17.71 3.1212 17.71 0.0046 19.700 6.08 26.51% 774.31 766.69 0.0036 0.0036 16.70 0.0032 20.607 6.08 26.53% 774.31 766.69 0.0036 0.0036 16.70 0.0032 20.607 6.08 | 3 5 | 758.16 | 761.10 | 0.6103 | 0.6118 | 19.11 | 2.00.0 | | 0.0025 | 10.078 | 6.20 | 26.98% | |
| 766.66 761.28 0.0840 0.8860 15.58 0.8851 15.20 0.0024 19.910 6.02 26.60% 25.60% 752.60 746.63 0.2817 0.8860 15.28 0.8836 15.20 0.0022 19.27 8.18 25.84% 754.66 757.44 1.246 15.80 0.0022 19.076 8.08 25.94% 758.18 751.19 0.3652 0.3644 14.86 0.3641 14.86 0.0023 19.076 8.08 25.84% 757.86 750.90 2.5690 2.5640 17.06 2.5640 17.06 0.0031 20.149 18.04 25.88% 757.86 750.90 2.5690 17.71 3.1212 17.71 0.0046 19.799 25.46 25.51% 762.90 766.73 3.1290 3.1260 17.71 3.1212 17.71 0.0046 19.799 8.08 26.53% 774.31 766.99 0.9036 0.9036 16.70 0.0023 20.687 82.83% 774.31 | | 761.75 | 754.82 | . 0.2201 | | 4.7 | 0.2.00 | | 0.0023 | 10 701 | 5.47 | 22.33% | |
| 752.60 746.63 0.2817 0.8860 15.24 16.86 0.0022 19.87 8.18 25.81% 754.86 757.44 1.246 15.86 0.0022 19.87 8.18 25.84% 758.18 0.3652 0.364 14.86 0.3641 14.86 0.0023 19.876 8.08 25.84% 758.18 0.3652 0.364 14.86 0.3641 17.06 0.0031 20.149 18.04 25.88% 18.04 25.88% 757.80 2.5690 2.5680 17.06 2.5649 17.06 0.0031 20.149 18.04 25.88% 25.85% 757.80 768.79 3.1290 3.1290 17.71 3.1212 17.71 0.0046 19.799 8.08 26.53% 774.31 768.69 0.9036 0.9036 16.70 0.9034 16.70 0.0023 20.687 82.83% 91.37% | | 766,66 | 781.28 | 0.6640 | | 15.58 | | 15.28 | 0.0024 | 19.910 | 6.02 | 26.60% | |
| 764.66 757.44 1.2460 1.2470 10.07 14.06 0.0023 19.076 6.69 25.04% 758.16 751.19 0.3664 14.86 0.3641 14.06 0.0023 19.076 18.04 25.88% 756.16 750.90 2.6890 17.06 2.5649 17.06 0.0031 20.149 18.04 25.88% 757.86 750.90 2.6890 17.71 3.1212 17.71 0.0046 19.799 25.46 25.51% 778.20 768.69 0.0038 15.70 0.0054 19.04 19.04 6.05 26.53% 774.31 768.69 0.0038 0.0038 15.70 0.0054 19.046 82.27 91.37% | | 752.60 | 746.83 | 0.2017 | | 13.20 | 0.0020 | | 0.0022 | 10.027 | 6.16 | 25.81% | |
| 756.16 751.19 0.3662 0.3664 14.00 0.0031 20.149 18.04 25.88% 25.84% 17.06 0.0031 20.149 18.04 25.88% | | 764.66 | 767.44 | 1.2460 | | 10.0 | 9777 | | 0.0023 | 10.076 | 99.0 | 25.04% | • |
| 757.86 750.90 2.5690 2.5690 17.08 6.084 17.71 0.0046 19.709 25.46 26.51%. This run no. ecodornally eldoped 766.73 3.1290 3.1260 17.71 3.1212 17.71 0.0046 19.709 6.08 26.53%. 762.80 766.89 0.0036 0.0038 16.70 0.0033 20.687 62.27 91.37%. | | 758.18 | 751.10 | 0.3882 | 0.3664 | 9.4 | | 17.08 | 0 0031 | 20.149 | 18.04 | 25.68% | _ |
| This run no. ecodomistly eldoped 766.73 3.1290 3.1280 17.71 3.1212 17.71 0.0046 19.799 25.46 26.51% 26.53% 762.80 766.79 0.0036 16.70 0.0036 16.70 0.0023 20.687 60.6 26.53% 774.31 766.69 0.0036 0.0036 16.70 0.0036 16.70 0.0034 19.46 62.27 91.37% | 22.5 | 767.86 | 750.00 | 2.5690 | | 90.71 | 7.004 | 2 | | ı | | | |
| 762.90 766.73 3.1290 3.1260 17.71 2.121 20.63% 8.08 28.63% 774.31 766.69 0.0036 0.0038 16.70 0.0034 19.46 62.27 01.37% | | Wilderstally | | | | , | | 17 71 | 0 00 0 | 19.700 | 25.46 | 26.51% | |
| 774.91 700.00 0.0030 0.0030 0.0030 0.0034 10.046 02.27 01.374 | | 742.00 | | 3.1290 | | 7.71 | 3.77.5 | 18.70 | 0.0023 | 20 687 | 90.9 | 26.63% | |
| | | | 766.60 | 0.9036 | 0.000 | 2 | | | | | 44 44 | 1/6 -0 | |



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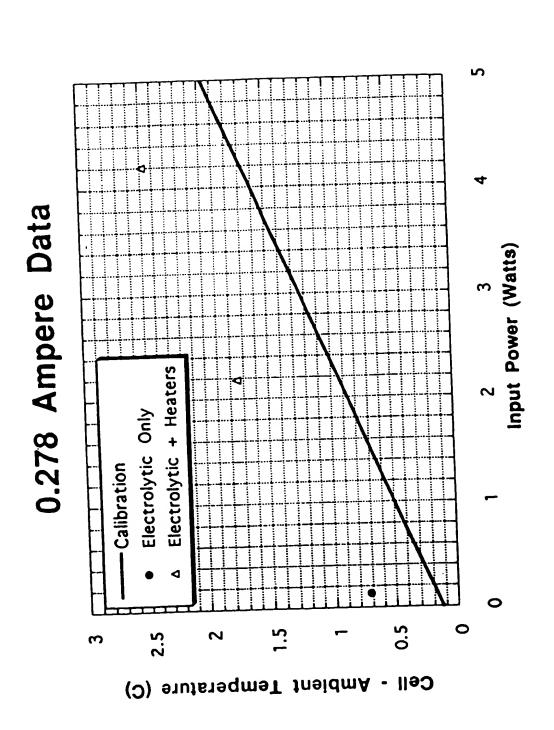


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| (smes) | 0.62 0.87 0.83 0.83 0.87 0.87 0.87 |
|------------------------------------|--|
| Омами <i>е</i> (F-1) | 10.094 365.34 NIA NIA NIA NIA NIA NIA NIA NIA |
| Outsull? | 112.0% 362.0% 211.3% 157.0% 126.3% 106.1% 408.2% 131.0% 106.7% 1019.6% |
| A Postal (walts) 2.084 | 1.217 2.303 2.301 2.312 1.303 1.170 3.367 2.050 3.407 1.702 2.530 |
| Output Power (wette) | 15.486 1.661 4.372 6.563 11.73 6.26 20.391 4.213 12.456 13.205 2.605 16.652 |
| finel_inbid) (watte) | 13.655 13.631 0.464 2.069 4.192 19.221 0.846 9.508 9.708 2.503 0.275 |
| MZO Power Correction (watta) | 0.0472 0.0355 0.0064 0.0167 0.0089 0.0089 0.0089 0.0080 0.0080 |
| 1 90 | 5,77 5,571 0,598 1,562 2,269 7,294 1,524 4,496 4,762 9,591 1,01 |
| Amblen. (C) | 10.948 19.567 20.176 19.725 19.607 19.607 19.607 19.627 20.065 20.268 20.268 |
| # (O) | 25.716 25.156 20.774 21.336 22.352 23.864 27.271 21.325 24.323 24.827 29.858 21.208 |
| ESS ESALY (Hz) (Volta) | |
| Outy Syde | 1.932 100% 1.932 100% 1.932 100% 7.186 20% 7.186 20% 14.130 20% 14.130 20% 14.302 20% 14.302 20% 14.370 20% 14.370 20% 25.867 100% |
| P (Wette) | |
| X I X (Volte) (Ampa) | 7.032 2 7.010 2 0.001 0.001 3.162 4.007 7.060 6.810 11.266 2.027 8.103 14.927 0.839 |
| X (Volte) | 3.576 3.531 1.060 mb. accident 2.061 2.220 2.130 2.130 2.404 2.406 1.711 3.233 |
| 4/20/05 ile Name lun Ma.) | un332/wet IId 3.676 7.032 2 un333/wet IId 3.631 7.010 3 un335/wet IId 1.960 0.001 un335/wet IId 1.960 0.001 iun336/wet IId 2.061 3.162 iun336/wet IId 2.220 4.007 iun336/wet IId 2.220 4.007 iun336/wet IId 2.130 6.810 iun340/wet IId 2.130 6.110 |



| Deta Takan Over Ilma Banot (min) | 1300.3800 2000.2500 6600.7200 3200.3600 2500.2600 1800.2000 1900.2000 1900.2000 2500.2800 2600.2800 |
|--|---|
| Person | 92.75% 90.86% 97.67% 39.28% 40.36% 25.31% 24.73% 36.46% 36.70% 36.70% 36.70% 36.70% |
| Plowrate (cc/min) (hilly cor.) | 73.11 71.51 10.65 14.01 22.20 34.52 16.51 66.76 5.62 35.60 33.34 61.69 31.9 |
| ជខ | 20,186 19,833 20,443 20,067 20,235 19,808 19,808 19,808 20,102 20,068 20,102 20,466 20,466 20,466 20,509 |
| P artition (poled) | 0.0200 0.0156 0.0035 0.0974 0.0222 0.0222 0.0072 0.0072 |
| 2 (p) 6 (p) | 18.20 20.89 16.31 15.53 15.22 14.77 16.06 15.04 15.17 16.22 16.16 |
| 2 (5) | 3.6800 6.8552 1.8165 1.8165 0.8300 0.5442 0.0428 0.193 0.2062 0.2062 0.4828 0.3388 0.4001 |
| 되 <u>@</u> | 16.22 20.71 16.31 15.83 14.78 16.86 15.20 16.86 16.24 16.24 16.24 |
| 1 (g) | 3.7100 6.8710 1.6200 0.7236 0.6416 0.0548 0.6415 0.6415 0.6415 0.6415 0.6422 0.6422 |
| 1 (0)46) | 3.7160 6.8730 1.8160 0.7218 0.6398 0.6398 0.6167 0.6167 0.4704 0.3368 |
| Ber. Pressio | 761.63 761.63 766.66 750.66 772.25 760.52 762.62 756.14 757.31 756.22 766.22 766.22 766.22 766.22 |
| Champion of the Control of the Contr | (1917) (from Barcell) (76.86 (76.38 (76.38 (76.28 (76.41 (76.41 (76.41 (76.43 (76.43 (76.43 (76.43 (76.43 (76.36 (76.36 (76.36 (76.36 (76.36 (76.36 (76.36 |
| 4/20/8 S | Aun Na.) Aun332/wet iid Run332/wet iid Run332/wet iid Run332/wet iid Run3328/wet iid Run342/wet iid Run343 Run348 Run348 Run348 Run348 Run348 Run348 |







MASSACHUSETTS INSTITUTE OF TECHNOLOGY LINCOLN LABORATORY

2 May 1995

TO:

Ad Hoc Committee Distribution

FROM:

C. W. Haldeman Will

SUBJECT:

Additional Material

You should have all received my viewgraphs from the 25 April meeting. At that meeting Marv and Ron requested that I replot the data from the new cell (Cell 4) in terms of excess power vs. net input power. This has been done and is attached. The large scatter seems to indicate that the excess power is not a function of net input or at least has a stronger dependence on some variable not controlled. Also requested and included is the old data from Cell 3 which includes variable not after the power failure. The calibration curve is the same for both windings of the cell and includes both calibration and recalibration results.

Since the data now includes both Cell 3 and 4, I replotted the Cell 4 results to avoid confusion. This is the same plot in the presentation which was entitled "Electrolytic Cell Data Results." Please add these figures to the package.

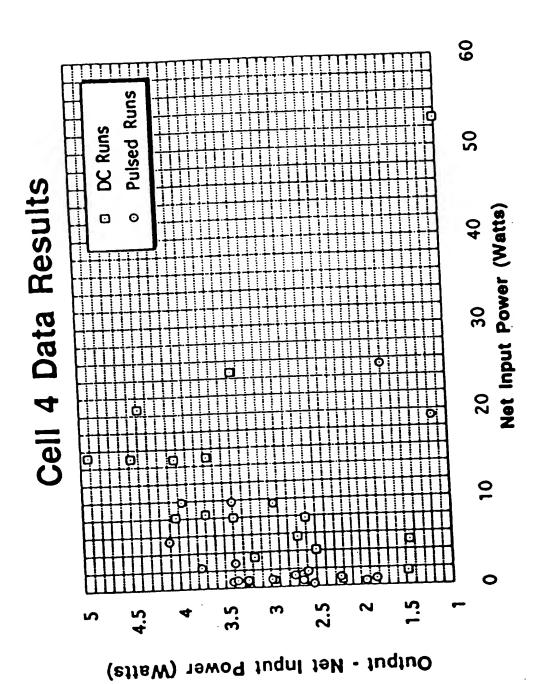
CWH:jf Attachments

9 20 Cell 3 Data Results Input Power (Watts) 30 20 Dead Cell Data Live Cell Data -Calibration 0 9 S 20 Cell - Amblent Temperature (C)

30 25 Cell 4 Data Results Net Input Power (Watts) **Pulsed Runs** Calibration DC Runs 0 S 9 Cell - Amblent Temperature (C)











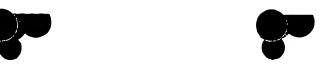


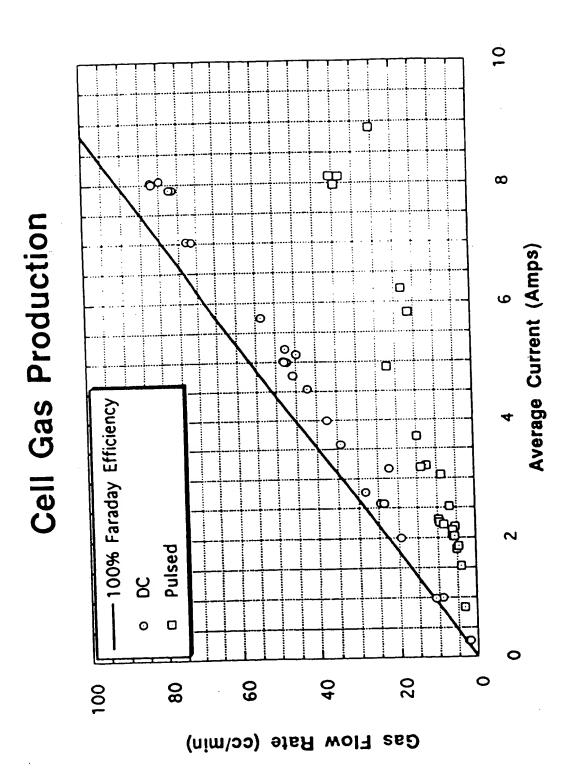
GAS MEASUREMENTS

- CHEMICAL ABSORPTION
 BURRELL WET ANALYZER
- INFICON QUADRAPOLE 102 VOLT ENERGY MASS SPECTROMETER
- CRYO CONDENSATION

Mercury Filled Gas Collection Vessels Mercury / Catch Basin Gas Recombiner Water Cooled H2O Drain Tube, Flash Suppressor Gas Line From Çell

Electrolytic Cell Current Gas Collection System











BURRELL ABSORPTION TUBE ANALYZER GAS WET ANALYSIS

GAS TESTED FOR

ABSORBENT

 CO_2

KOH sol

02

CrCl2 sol

HOT (300°C) C_uO

WET ANALYSIS RESULTS

PERCENT

| SAMPLE | CO ₂ O ₂ | 02 | Н2 | RESIDUE |
|-------------------------------------|--------------------------------|-----------|------|--|
| AIR | 0 | 21 | | 42 |
| RAW CELL GAS | 0 | 32 | 29 | 01 |
| RECOMBINED CELL GAS MANY SAMPLES | 0 | 1822 00.2 | 00.2 | BALANCE 78——82 CALLED PROCESSED CELL GAS |

MASS SPEC ANALYSIS OF PROCESSED CELL GAS SHOWS N₂, A, H₂O

HYDRO-CATALYSIS CLAIMS TO HAVE FOUND 1-2% $\mathrm{H_2}$







• GAS GENERATION

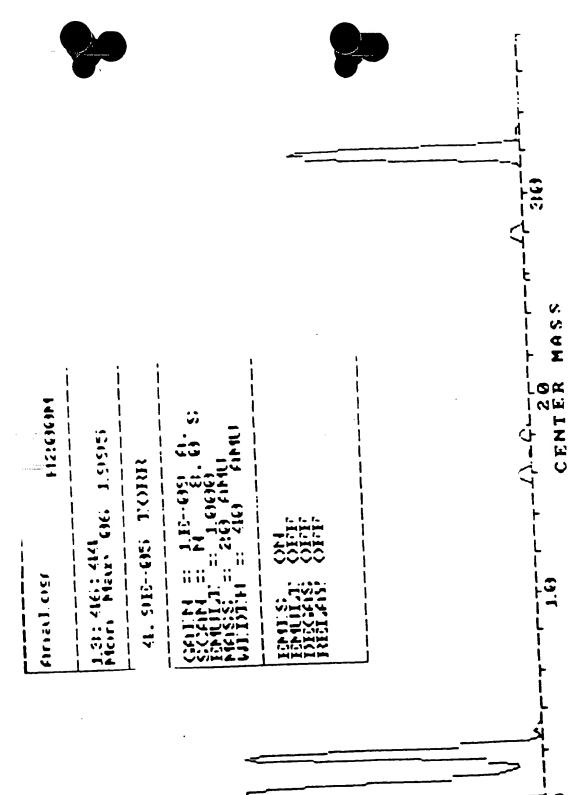
2 TO 100 cc/minute 2.8 TO 144 l/day

• RECOMBINED WATER CHECKS OUT GAS MEASUREMENT

• RESIDUAL GAS FROM RECOMBINER - 50 — 100 cc/day - 1.8% TO 0.1% OF TOTAL GAS FLOW - NEARLY 100% CONDENSED OVER LN2





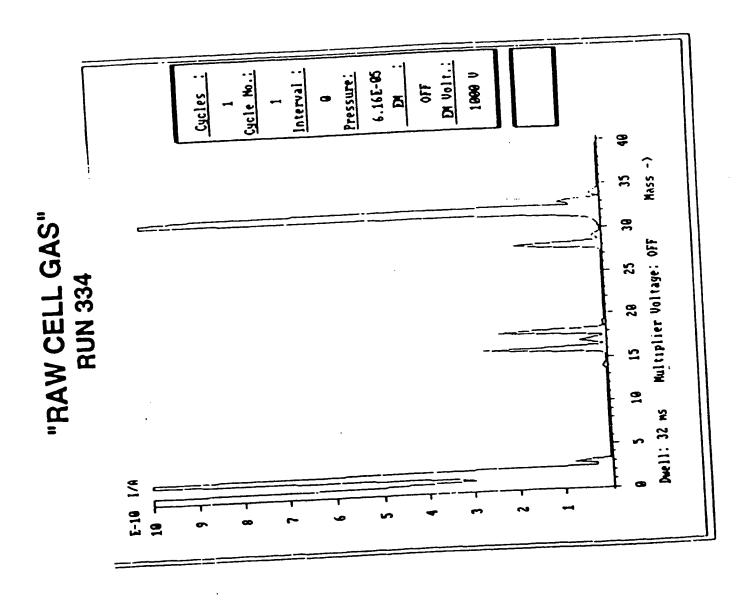


"RAW CELL GAS"

A I マット・トリロア

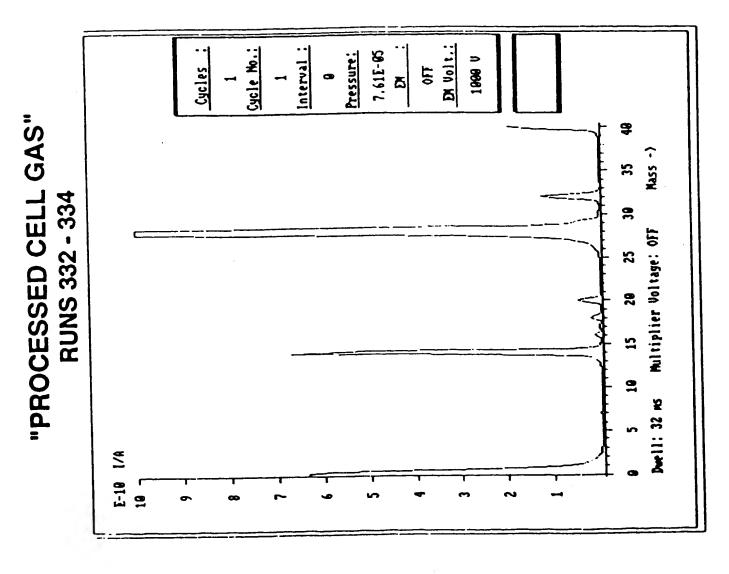






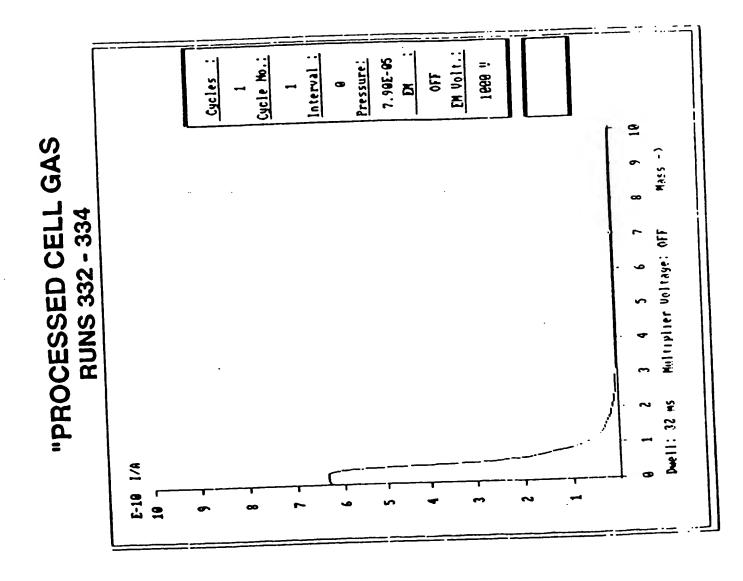












ISOTOPIC RATIOS - HD/H2

| RE TORR 3/2 RATIO | 10-4 0.052 |
|--------------------|------------------------|
| TEST PRESSURE TORR | 1.3 x 10 ⁻⁴ |
| SAMPLE | BOTTLE HYDROGEN |

0.035

9.8 x 10⁻⁵

LAB DI WATER

0.025 0.031 8.9×10^{-5} 9.7×10^{-5} RECOMBINER WATER **CELL GAS**

 9.9×10^{-5}

CELL ELECTROLYTE

0.044







WHAT TO DO NEXT FOR HIGHER ENERGY

• STUDY GAS CELL WHICH HAS MUCH HIGHER ENERGY DENSITY - HYDROCATALYSIS WILL PAY -- CRDA?

• TEST PALLADIUM - SILVER COATED NICKEL WIRE WITH D2 O SYSTEM ACC CONTINUATION? •INVESTIGATE TUBULAR REACTOR USING PALLADIUM - SILVER



CONCLUSIONS

• EXCESS ENERGY IS PRESENT AT 0.5 TO 5 W LEVEL 0.5 TO 2.5° ABOVE CALIBRATION

TEMPERATURE CALIBRATIONS ± .02°C

• GAINS ARE HIGH 5 TO 14 × NET INPUT 1.5 TO 4 × GROSS VI INPUT

BUT ONLY AT 1-4 W EXCESS

- SOURCE IS NOT DETERMINED
- LOWER STATE HYDROGEN WAS NOT FOUND WHY?
 - A) NOT THERE
- CHEMICALLY MORE REACTIVE THAN REPORTED **EASILY ABSORBED IN METAL**
- ISOTOPIC RATIOS CONSISTENT WITH ELECTROLYTIC CELL **DECOMPOSITION OF WATER**
- CANNOT PROVE OR DISPROVE POSSIBLE EXPLANATIONS **FOR EXCESS HEAT**



